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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,094	09/12/2003	Kirsty Jane Dodgson	875.092US1	7668

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EXAMINER	
HINES, JANA A	

ART UNIT	PAPER NUMBER
1645	

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/661,094	DODGSON, KIRSTY JANE	
	Examiner	Art Unit	
	Ja-Na Hines	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) *2-7,10-14,20-22,24 and 26-43* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,8,9,15-19,23 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Amendment Entry

1. The amendment filed March 6, 2006 has been entered. Claims 1, 8-9, 15, 17-18 and 25 have been amended. Claims 2-7,10-14, 20-22, 24, 26-43 have been withdrawn from consideration. Claims 1, 8-9, 15-19, 23 and 25 are under consideration in this office action.

Withdrawal of Objections

2. The objection of claims 15-18 and 25 has been withdrawn in view of applicants amendments and arguments.

Response to Arguments

3. Applicant's arguments filed March 3, 2006 have been fully considered but they are not persuasive. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

4. The written description rejection of claims 1, 8-9, 15-19, 23 and 25 under 35 U.S.C. 112, first paragraph, is maintained for reasons already of record. The rejection was on the grounds that the instant specification and claims are encompassing currently unidentified portions of the sequences substantially corresponding to nucleotides 851 to 868, 870 to 896 or 898 to 917 or the complements thereof.

Applicants' assert that because the specification clearly identifies nucleotides 851 to 868 (SEQ ID NO:2), 870 to 896 (SEQ ID NO:3) or 898 to 917 (SEQ ID NO:4) or the complements thereof, the specification meets the requirements of written description. However it is the examiner's position that the portions refers to subsequences within SEQ ID NO:2,3 and 4 and not to those entire sequences. Thus there is evidence of record of portions of the claimed nucleotides. The scope of the claims includes numerous structural variants and the genus is highly variant because a significant number of structural differences between the genus members are permitted. The specification fails to provide guidance on the structure of the portions thereof. The written description in this case only sets forth specific nucleotide sequences in SEQ ID NO:2-4, therefore the written description is not commensurate in scope with the claims drawn to portions of SEQ ID NO:2-4. Applicants have not pointed to how to define the portions. Neither has applicants pointed to any guidance as to what the portions are; or what portions can or cannot be used in the method of detection being claimed. Furthermore, applicants have not disclosed a sequence that substantially corresponds to nucleotides 851 to 868, 870 to 896 or 989 to 917. There is no teaching whether these substantially corresponding sequences includes deletions, additions or substitutions. There is no description of how much correspondence there must be. The specification does not include structural examples of portions thereof. If the genus has a substantial variance, the disclosure must describe a sufficient variety of species to reflect the variation within that genus. See MPEP 2163. Although the MPEP does not define what constitute a sufficient number of representative, the Courts have indicated what do not constitute a representative number species to adequately describe a broad generic. In *Gostelli*, the Court determined that the disclosure of two chemical compounds within a subgenus did not describe that subgenus. *In re Gostelli*, 872 F.2d at 1012, 10 USPQ2d at 1618. Here there are no representative examples of portions of SEQ ID NO:2-4. Therefore applicants assertions are not persuasive.

Therefore, with the exception of specifically named nucleotide sequences, the skilled artisan cannot envision the detailed structure of the portions thereof, thus conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Therefore the full breadth of the claims fails to meet the written description provision of 35 USC 112, first paragraph and the rejection is maintained.

5. The rejection of claims 1, 8-9, 15-19, 23 and 25 under 35 U.S.C. 112, second paragraph, is maintained for reasons of record.

a) The rejection was on the grounds that the preamble of the claims is drawn to a method to detect *vanA* in a sample, however the recited steps within the method comprise a contact step and detecting or determining the presence or amount of hybrid formation. Applicants assert that because the claims are drawn to detection of hybrids between amplified *vanA* and the *vanA* probe the method is clear. However it is the examiner's position that the claims still lack a correlation step. The claims should positively recite a correlation between detecting or determining the hybrid formation detecting or determining the presence or amount of *vanA* in the sample. Therefore, the goal of the preamble is not commensurate with the steps of the method that are drawn to a method to detect *vanA* in a sample and the rejection is maintained.

b) Although the claims have been amended to give SEQ ID NO's to nucleotides 870 to 896, nucleotides 851 to 868, and nucleotides 898 to 917, the claims fail to recite the reference sequence upon which the nucleotide regions are based. It is not clear where or what reference sequence these regions and numbering refer to. Therefore, the rejection is maintained.

c) The phrase "the sequences substantially corresponding to nucleotides...." in the claim is a relative term which renders the claim indefinite. The phrase is not defined by the claim, the

specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. There are no requisite requirements regarding the how to determine whether a sequence substantially corresponds. It is unclear how much correspondence there must be. Therefore the metes and bounds of the phrase cannot be ascertained. Thus, clarification is required to overcome the rejection.

Claim Rejections - 35 USC § 102

6. The rejection of claims 1, 8-9, 15-18, 23 and 25 under 35 U.S.C. 102(b) as being anticipated by Petrich et al., (Mol. and Cellular Probes, 1999, Vol. 13:275-281) is maintained for reasons of record.

The rejection was on the grounds that Petrich et al., teach a method to detect *vanA* in a sample, comprising: a) contacting a sample suspected of comprising amplified *vanA* nucleic acid with at least one *vanA* -specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the *vanA* -specific oligonucleotide probe and *vanA* nucleic acid in the sample, wherein the *vanA* -specific oligonucleotide probe comprises sequence which include sequences substantially corresponding to nucleotides 870 to 896 of the *vanA* gene, the complement thereof, or a portion of the sequences substantially corresponding to nucleotides 870 to 896 or the complement thereof, sequences substantially corresponding to nucleotides 851 to 868 of the *vanA* gene, the complement thereof, or a portion of the sequences substantially corresponding to nucleotides 851 to 868 or the complement thereof, or sequences substantially corresponding to nucleotides 898 to 917 of the *vanA* gene, the complement thereof, or a portion

of the sequences substantially corresponding to nucleotides 898 to 917 or the complement thereof; and b) detecting or determining the presence or amount of hybrid formation. The dependant claims are drawn to a physiological peri-rectal samples, probes which are not specific for *vanA*-specific probe and are *vanB* specific probe.

Applicants' assert that Petrich et al., do not teach the detection of hybrids between the amplified vanA nucleic acid from the sample and the vanA-specific probe. However it is the examiner's position that the claims do not require direct hybridization specifically to nucleotides of SEQ ID NO:2-4, rather the claims require hybridization to a sequence which comprises any one of the recited nucleotides or any portion of the recited regions. The claims are drawn to a portion of sequences substantially corresponding to nucleotides 851 to 868, 870-896, or 898 to 917 of the *vanA* gene, which Petrich et al., teach.

Applicants' urge that the claims require high stringency. However it is well known in the art that high stringency refers to the strength of the bonds between the bases and does not equate to a level of sequence identity between the strands. Therefore applicants' arguments are not persuasive and the rejection is maintained since, Petrich et al., teach a method to detect *vanA* in a sample just as required by the claims.

7. The rejection of claims 1, 8-9, 15-19, 23 and 25 under 35 U.S.C. 102(b) as being anticipated by Modrusan (US Patent 6,274,316) is maintained for reasons already of record.

The rejection was on the grounds that Modrusan teaches a method to detect *vanA* in a sample, comprising: a) contacting a sample suspected of comprising amplified *vanA* nucleic acid with at least one *vanA* -specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the *vanA*-specific oligonucleotide probe and *vanA*

nucleic acid in the sample, wherein the *vanA*-specific oligonucleotide probe comprises an instantly recited sequence and b) detecting or determining the presence or amount of hybrid formation. The dependant claims are drawn to a physiological peri-rectal samples, probes which are not specific for *vanA*-specific probe and are *vanB* specific probe.

Applicants' urge that Modrusan does not teach the detection of hybrids between the amplified vanA nucleic acid from the simple and the vanA-specific probe. However it is the examiner's position that the claims do not require direct hybridization specifically to the nucleotides of SEQ ID NO:2-4, but rather the claims require hybridization to a sequence which comprises any one of the recited nucleotides or any portion of the recited regions. The claims are drawn to a portion of sequences substantially corresponding to nucleotides SEQ ID NO:2-4 of the *vanA* gene, which Modrusna teaches.

Again applicants' urge that the claims require high stringency. However high stringency refers to the strength of the bonds between the bases and does not equate to a level of sequence identity between the strands. Therefore applicants' arguments are not persuasive and the rejection is maintained since, Modrusan teaches a method to detect *vanA* in a sample just as required by the claims.

New Grounds of Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 8-9, 15, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Arthur et al., (US Patent 5,871,910).

The claims are drawn to a method to detect *vanA* in a sample, comprising: a) contacting a sample suspected of comprising amplified *vanA* nucleic acid with at least one *vanA* -specific oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the *vanA*-specific oligonucleotide probe and *vanA* nucleic acid in the sample, wherein the *vanA*-specific oligonucleotide probe comprises sequence which include sequences substantially corresponding to nucleotides 870 to 896 (SEQ ID NO:3) of the *vanA* gene, the complement thereof, or a portion of the sequences substantially corresponding to nucleotides 870 to 896 or the complement thereof, sequences substantially corresponding to nucleotides 851 to 868 (SEQ ID NO:2) of the *vanA* gene, the complement thereof, or a portion of the sequences substantially corresponding to nucleotides 851 to 868 or the complement thereof, or sequences substantially corresponding to nucleotides 898 to 917 (SEQ ID NO:4) of the *vanA* gene, the complement thereof, or a portion of the sequences substantially corresponding to nucleotides 898 to 917 or the complement thereof; and b) detecting or determining the presence or amount of hybrid formation. The dependant claims are drawn to a physiological samples, and specific probes.

Arthur et al., teach probes for the detection of nucleotide sequences implicated on the expression of resistance to glycopeptides, in particular in gram-positive bacteria.
Arthur et al., teach nucleotide probes used for the detection of resistance to glycopeptides by means of polymerase chain reaction (PCR) (col. 2, lines 23-26). In particular, glycopeptides such as *VanA* which exhibit a certain homology with D-alanine-D-alanine ligases and is nonetheless

functionally distinct from the ligases (col. 2, lines 10-15). Arthur et al., teach cases where sequences hybridize with the sequence of the *vanA* gene under high stringency conditions (col. 3, lines 15-28). Nucleotide sequences corresponding to SEQ ID NO:15-17 or any part of the sequences, or any sequence or part that is complementary and capable of constituting a hybridization probe for the detection of resistance as disclosed (col. 5, lines 32-44). SEQ ID NO:15 and 16 comprise instantly claimed nucleotides 851-868. SEQ ID NO:17 codes for the 3 resistance proteins including *vanA* (col. 5, lines 50-51). SEQ ID NO:17 comprises instantly claimed nucleotides 851-868 and 870-896. Arthur et al., also teach using SEQ ID NO :3 or a sequence hybridizing with it within the hybridization method (col. 2, lines 60-65). SEQ ID NO:3 comprises instantly claimed nucleotides 870-896 and 898-917. The inventors teach labeled nucleotide probes capable of hybridization, just as required by the claims (col. 7, lines50-55). The method teaches placing a biological sample likely to contain the resistant strains in contact with a primer constituted by a nucleotide sequence described above or any part of a sequence described above, capable of hybridizing with a desired nucleotide sequence and detecting the product of amplification of the nucleotide sequences (col. 10, lines 37-56).

Thus Arthur et al., teach a method to detect *vanA* in a sample comprising the contacting and detection steps, just as required by the claims.

9. Claims 1, 8-9, 15, 17-19, 23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Bergeron et al., (US Patent 5,994,066).

The claims are drawn to a method to detect *vanA* in a sample, comprising: a) contacting a sample suspected of comprising amplified *vanA* nucleic acid with at least one *vanA* -specific

oligonucleotide probe under high stringency hybridization conditions effective to form a hybrid between the *vanA*-specific oligonucleotide probe and *vanA* nucleic acid in the sample, wherein the *vanA*-specific oligonucleotide probe comprises sequence which include sequences substantially corresponding to nucleotides 870 to 896 (SEQ ID NO:3) of the *vanA* gene, the complement thereof, or a portion of the sequences substantially corresponding to nucleotides 870 to 896 or the complement thereof, sequences substantially corresponding to nucleotides 851 to 868 (SEQ ID NO:2) of the *vanA* gene, the complement thereof, or a portion of the sequences substantially corresponding to nucleotides 851 to 868 or the complement thereof, or sequences substantially corresponding to nucleotides 898 to 917 (SEQ ID NO:4) of the *vanA* gene, the complement thereof, or a portion of the sequences substantially corresponding to nucleotides 898 to 917 or the complement thereof; and b) detecting or determining the presence or amount of hybrid formation. The dependant claims are drawn to a physiological samples, and specific probes.

Bergeron et al., teach species specific and universal DNA probes and amplification primers to rapidly detect and identify common bacterial pathogens and associated antibiotic resistance genes from clinical specimens for routine diagnosis in microbiology labs. Bergeron et al., teach a method using probes and amplification primers for determining the presence and/or amount of nucleic acids (col. 3, lines 62-65). The selected genes include *vanA*, *vanB* and other bacterial antibiotic resistance genes from other bacterial species in any sample suspected of containing said nucleic acids wherein each of the nucleic acids or a variant or part thereof comprises a selected target region hybridizable with said probes or primers (col. 4, lines 7-18). The method comprises the steps of contacting the sample with the probes or primers and

detecting the presence and/or amount of hybridized probes or amplification products as an indication of the presence and/or amount of said any bacterial species, specific bacterial species and bacterial antibiotic resistance gene (col. 4, lines 19-24). Thereby teaching the detection of both *vanA* specific oligonucleotide probes and non-*vanA* probes, just as required by the claims. The method of detection may include fluorescence based detection, just as required by the claims (col. 12, lines 57-61). Example 7 teaches detection directly from clinical samples, just as required by the claims. Example 8 teaches PCR amplification, just as required by the claims. Example 11 teaches detection of antibiotic resistance genes. Example 12 teach multiplex PCR which uses several pairs of primers in a single PCR reaction. Example 13 teach the detection of labeled amplification products. SEQ ID NO: 170 comprises instantly claimed nucleotides 851-868, 870-896 and 898 to 917. See also claim 53 which is drawn to a method using probes and amplification primers for determining the presence and/or amount of nucleic acids wherein hybridization with anyone of the nucleotide sequence defined in SEQ ID NO:170 and a sequence complementary under conditions such that the nucleic acid of the probe selectively hybridizes with said bacterial DNA and detecting the presence of the hybridization complex as an indication of the bacterial resistance to vancomycin mediated by the bacterial antibiotic resistance gene.

Thus Bergeron et al., teach a method to detect *vanA* in a sample, just as required by the claims.

Conclusion

10. No claims allowed.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ja-Na Hines whose telephone number is 571-272-0859. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith can be reached on 571-272-0864. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ja-Na Hines

May 1, 2006

L. R. F. Smith

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